SENSITIVE PLANT SPECIES

Barneby Woody Aster (*Aster kingii var. barnebyana)*

Barneby woody aster is a member of the sunflower family (Asteraceae) and it grows from a well-developed taproot. There are persistent blackish or dark brown old leaf bases at the base of the plant. The stems are short (3-12 cm long) and the herbage is covered with glandular hairs. The leaves are basal, 0.8-12 cm long, and oblanceolate to spatulate in shape (Welsh et al. 2003) with 1-10 pronounced teeth (Atwood et al. 1991). Flowers occur in clusters of 1-5, standing 8-11 mm high. The inner bracts are often purplish and at least the outer tips are bent backward. The ray flowers are white, often fading to pale pink (Welsh et al. 2003). This plant flowers between August and September (Atwood et al. 1991).

This species is found in mountain mahogany and oak communities on rock outcrops composed of Precambrian quartzite (Franklin 1990, Atwood et al. 1991). These scattered occurrences indicate a total population of 600+ plants. The range of elevation is between 6,000 and 10,000 feet (Welsh et al. 2003). Major associated species are mountain spray (*Holodiscus dumosus*), red alumroot *(Huechera rubescens),* mountain snowberry *(Symphoricarpos oreophilus*), and shortstem buckwheat (*Eriogonum brevicaule*) (Franklin 1990).

Barneby woody aster is present within 15-quarter sections, all on the Fillmore Ranger District of the Fishlake National Forest (Madsen 2002). Plants are harbored from threats such as livestock grazing by their occurrence on steep rock outcrops.

Bicknell Milkvetch (*Astragalus consobrinus)*

Bicknell milkvetch is a member of the pea family (Fabaceae). *A. consobrinus* is an acaulescent perennial, growing 1-5 cm tall, essentially lacking stems. The leaves with 3-11 leaflets are densely hairy on both sides. Flowers occur 2-10 per stem. The sepals are whitish, sometimes faintly purple tinged. The pods are 11-19 mm long, ovoid, and unilocular (Welsh et al. 2003). This species is found only on volcanic gravel, gravelly or sandy knolls, and barren stony hillsides (Atwood et al. 1991). It appears in pinyon-juniper and sagebrush communities between 6,000 and 8,500 feet (Welsh et al. 2003). Flowering occurs from mid-May to mid-July with hairy pods produced later (Atwood et al. 1991).

Bicknell milkvetch occurs in Sevier, Wayne, Piute, Garfield, and Emery Counties (Welsh et al. 2003). To date, there are 23-quarter sections known to have Bicknell Milkvetch within their boundaries. These all occur on the Loa Ranger District (Madsen 2002).

Tushar Paintbrush (*Castilleja parvula var. parvula*)

Tushar paintbrush is a member of the Figwort family (Scrophulariaceae). Its many stems reach between 9 and 21 cm in height with the old stems persisting and supporting entire lanceolate leaves. The inflorescence is dense and crimson or magenta colored, with a 1-2 cm calyx with unequal lobes (Welsh et al. 2003). The flowers appear from June to July, and the capsules break open to allow dispersion of seeds by wind or gravity (Spahr et al. 1991).

This taxa is distributed almost exclusively through the alpine meadows and igneous rockbeds of the Tushar Mountains between 10,000 and 12,000 feet (Spahr et al. 1991). This location is under the jurisdiction of the Beaver Ranger District of the Fishlake National Forest. Within Forest boundaries, it occurs in Beaver and Piute Counties (Madsen 2002). This species is one of several *Castilleja* species that occupy narrow ecological and edaphic sites. Mining claims and mineral exploration have impacted habitat of this plant. Grazing may also affect this species (Spahr et al. 1991). Evidence of grazing had been observed during surveys (Clark 2002).

Castilleja parvula var. *parvula* occurs on the Beaver Ranger District of the Fishlake National Forest, currently known in 45-quarter sections (Madsen 2002). The species has been found to be very locally common, although it is very geographically restricted.

Pinnate Spring-parsley (*Cymopterus beckii*)

Pinnate spring-parsley is a member of the Parsley family (Apiaceae) that grows up to 40 cm tall. The leaves extend up the stem from a taproot, which is often clothed at the base with persistent leaf bases. The leaves are once or twice pinnate, with 2-3 opposite pairs of lateral leaflets. The leaflets are 0.5-4 cm long, or the terminal one may be up to 5.5 cm long. There are 1-3 flower clusters per stem. The bractlets are greenish with narrow margins. The petals are bright yellow when fresh, fading to white when dried (Welsh et al. 2003). Pinnate spring-parsley flowers from late May into July (Spahr et al. 1991). *C. beckii* can be distinguished from the closely related *C. lemmoni* by *C. beckii*'s entire leaflets, glabrous peduncles and rays, and slightly longer fruit (Welsh et al. 2003).

Pinnate spring-parsley occurs in pinyon-juniper, mountain brush, and ponderosa pine communities in sandy or stony places between 5,500 and 8,600 feet. This plant is endemic to Wayne and San Juan counties (Welsh et al. 2003).

Possible impacts to this species may come from road construction, mining, and/or oil and gas exploration. This plant grows mostly on sites inaccessible to large grazing animals (Spahr et al. 1991).

Pinnate spring-parsley is found in cliff crevices or sandy canyon bottoms of Navajo Sandstone and Cutler formations. Common associate plants species include little–leaf mountain mahogany *(Cercocarpus intricatus*), pinyon pine *(Pinus edulis*), Utah juniper *(Juniperus osteosperma*), and virgin-bower *(Clematis ligusticifolia*). At the lower elevation, pinnate spring-parsley is restricted to north-facing, shady slot canyons in Navajo Sandstone. Pinnate spring-parsley is found in less protected areas such as cracks and crevices of sandstone domes at higher elevations (Clark 2002).

Currently there are 10 known locations of *C. beckii* on the Loa Ranger District of the Fishlake National Forest, containing approximately 2,760 – 27,100 individuals (Clark 2002).

Creeping Draba (*Draba sobolifera)*

A member of the Mustard family (Brassicaceae), creeping draba has a branched caudex and tall, slender flower stalks with some or no leaves. The obovate leaves are up to 2 cm long and covered with star-shaped hairs. Flowering in July and August (Spahr et al. 1991), each stalk sports 5-20 yellow flowers measuring 4-5 mm in length. The fruit is a silicle up to 8 mm long with 4-12 seeds (Welsh et al. 2003).

The creeping draba grows mostly on igneous gravels of the Tushar Mountains (Spahr et al. 1991) as a member of alpine tundra or spruce-fir communities between 10,000 and 12,100 feet (Welsh et al. 2003).

Activities associated with mineral exploration and extractions have impacted the species (Spahr et al. 1991). This species is not affected by grazing as it occurs in igneous soils and on talus slopes where livestock grazing does not occur.

Creeping draba is known from 24-quarter sections on the Beaver Ranger District of the Fishlake National Forest (Madsen 2002)**.** It is also reported to be on the Markaguant Plateau, Dixie National Forest. Further efforts to pinpoint a known location for the Dixie National Forest are necessary.

Nevada Willowherb *(Epilobium nevadense)*

Nevada willowherb is a member of the evening primrose family (Onagraceae). Nevada willowherb is shrubby with persistent, woody branches and a stout taproot. The stems are more or less upright, leafy, and 15-40 cm tall. The leaves are narrow, mostly alternate, 4-20 mm long, and folded. There are few to several flowers in a terminal cluster. The hypanthium is 2.0-4.5 mm long. The sepals are 2-4 mm long and purplish, with united 4-lobed pink and purple petals (Welsh et al. 2003). This species flowers from late June through September (Atwood et al. 1991).

Preferred habitat for this species includes pinyon-juniper and mountain brush communities on limestone cliffs and gravels at the base of cliffs (Spahr et al. 1991) at elevations between 5,100 and 8,800 feet in Iron, Millard, and Washington Counties in Utah (Welsh et al. 2003). Common associates of the Fishlake National Forest populations include mountain spray (*Holodiscus dumosus*), Gambel's oak (*Quercus gambelii*), hairy goldenaster (*Heterotheca villosa*), bluebunch wheatgrass (*Elymus spicatus*), Watson's goldenbush (*Haplopappus watsoni*), curl-leaf mountain mahogany (*Cercocarpus ledifolius*), alder-leaf mountain mahogany (*C. montanus*), big or common sagebrush (*Artemisia tridentata*), pinyon pine (*Pinus edulis*), Utah juniper (*Juniperus osteosperma*), and shortstem buckwheat *(Eriogonum brevicaule*) (Franklin 1990).

Little is known about this species. Livestock and wildlife grazing and off-road vehicle use could threaten populations. Few roads exist in areas where this species is found. Populations often occur on Precambrian quartzite parent material (Franklin 1990).

Presently there are 10-quarter sections known to have occurrences of Nevada willowherb on the Fillmore Ranger District of the Fishlake National Forest (Madsen 2002). Previous records indicated a total population size of 425+ plants for the Fishlake National Forest. While concentrated in the Canyon Mountains on the Fishlake National Forest, this Utah/Nevada endemic has a fairly large overall distribution (Franklin 1990).

Elsinore Buckwheat (*Eriogonum batemanii var. ostlundii)*

Elsinore buckwheat is a member of the buckwheat family (Polygonaceae) that grows 10-45 cm tall. The stems are glabrous and erect with five branched flowering stalks. The leaves are basal, elliptic to spatulate, 1-3 cm long, and white tomentose underneath. The flowers are 1.5-2.8 mm long and white in coloration. Fruit consists of several pale brown achenes that are 2.5-3.0 mm long (Welsh et al. 2003). This species flowers between June and September (Atwood et al. 1991).

Elsinore buckwheat prefers igneous outcrops and gravels in shadscale, ponderosa pine, mixed desert shrub, and juniper communities between 5,500 and 6,500 feet. This sensitive plant is endemic to Piute and Sevier Counties in central Utah (Welsh et al. 2003).

Presently, there are 5 quarter sections with known occurrences on the Richfield Ranger District, 7 quarter sections with known occurrences on the Fillmore Ranger District, and 3 quarter sections with known occurrences on the Beaver Ranger District of the Fishlake National Forest. Thirteen known occurrences exist on private, State, and BLM administered lands within one mile of the Fishlake National Forest boundary (Madsen 2002).

Fishlake Naiad (*Najas caespitosa)*

The Fishlake naiad is a member of the naiad or water-nymph family (Najadaceae). This species is a submerged aquatic plant. The stems are stout, densely branching, and 2-4 cm long. Leaves are narrow and linear, about 3-12 mm long. Male florets are 2.0-2.5 mm long with a single, one-celled anther, while female florets are 2.0-2.5 mm long with three stigmas. The fruit is 2-2.5 mm long, with one shiny seed (Welsh et al. 2003). This species flowers and fruits in July and August (Atwood et al. 1991).

This naiad prefers habitats in shallow water of 12 inches or less with sand or gravel bottoms at 8,600 feet. In addition, this species is endemic to Pelican Point, Fishlake, in Sevier County (Spahr et al. 1991, Welsh et al. 2003).

The only known population of this species is located on the Loa Ranger District of the Fishlake National Forest; however, presence of this species has not been verified since the type collection of August 3, 1940 (Madsen 2002).

Little Penstemon *(Penstemon parvus)*

A member of the Figwort family (Scrophulariaceae), little penstemon has several stems 7-20 cm tall, from a relatively long, slender root system. The leaves are 0.7-6 cm long, entire, and often folded. The cymes are one to two flowered. The petals are blue and up to 20 mm long (Welsh et al. 2003). Little penstemon flowers from late June to August (Spahr et al. 1991).

Little penstemon grows in sagebrush and grass-forb communities at elevations between 8,500 and 10,500 feet. It is endemic to Utah in Piute, Garfield, and Sevier counties and apparently endemic to the Aquarius Plateau (Welsh et al. 2003).

There were 10 known populations of this species on the Loa Ranger District of the Fishlake National Forest in 1988 (Tew 1988). There are 18 quarter sections known to have occurrences on the Loa Ranger District, and 1 suspected on the Richfield Ranger District, which has not yet been verified (Madsen 2002).

Reclamation projects, roads, and the effects of excessive grazing in the past currently threaten this species' survival. This plant has been affected by sheep grazing (Spahr et al. 1991).

Ward Beardtongue *(Penstemon wardii)*

Ward beardtongue is a member of the figwort family (Scrophulariaceae). *P. wardii* has stems that are 15-43 cm tall and covered with small, rough hairs and dust. The leaves are entire, both basal and cauline, and oblong-lanceolate. Basal leaves are 1.5-9 cm long. The cymes hold one to several flowers, which are 2-3 cm long and blue with purple-red guidelines (Welsh et al. 2003). Flowering for this species occurs from May through July (Atwood et al. 1991).

This species prefers habitats in the desert shrub, pinyon-juniper, sagebrush, shadscale, and greasewood communities on the Bald Knoll and Arapien Shale formations (Atwood et al. 1991) at elevations between 5,500 and 6,800 feet (Welsh et al. 2003).

Increased utilization of gypsum will tend to reduce the habitat availability and population size of this species. Gypsum mining has and may continue to pose the major threat to endemic plants on the Arapien Shale Formation (Spahr et al. 1991).

Ward beardtongue can be found in Sanpete, Sevier, and Millard Counties and presently is known to occur on all districts of the Fishlake National Forest in 30-quarter sections (Madsen 2002).

Arizona Willow (*Salix arizonica*)

A member of the Willow family (Salicaceae), Arizona willow is a shrub the grows from ½ inch to 10 feet tall that can be scraggly, rounded, prostrate, or thicket formed (Galeano-Popp 1988). Leaves are 0.4-1.8 inches long and 0.2-0.9 inches wide and are rounded or nearly heart-shaped at the base with fine-toothed margins (USFWS 1992). The previous season's stems are bright red, while the current year's stems are yellow-green, red-brown, or brownish (Atwood 1996). Male catkins are 1-3 cm long, and female catkins are 1-4 cm long, both with brown to black pubescent scales. This species is related to and can be confused with *Salix boothii* in morphology (Fletcher 1987).

According to Arizona documents, *S. arizonica* occurs at elevations above 8,500 feet in wet meadows and streamsides, on volcanic soils (Galeano-Popp 1988, Mead 1996). In Utah, Arizona willow has also been found as low as 8,300 feet on calcareous soils (Mead 1996). Most plants have been found adjacent to perennial water, and less commonly in meadows adjacent to forest edges or meadows with sparse stands of spruce. Species associated with the Arizona willow include Geyer willow, Utah serviceberry, Bebb willow, blue and Engelmann spruce, shrubby cinquefoil, monkeyflower, tufted hairgrass, and *Carex* species (Galeano-Popp 1988).

Until recently, Arizona willow was known only to exist in the White Mountains of Arizona on land managed by the Apache-Sitgreaves National Forest and the White Mountain Fort Apache Indian Reservation (Galeano-Popp 1988). In 1993, a specimen was discovered in the Forest Service national collection that had been collected in 1913 from the "Sevier Forest," (Mead 1996) now administered by the Powell Ranger District, Dixie National Forest. Since formal surveys were begun in July 1994, numerous verified populations of this species have been recorded in Utah. Confirmed sightings occur in Sevenmile Creek and UM Creek on the Fishlake National Forest, Sidney Valley, Rainbow Meadows, Navajo Lake, and the East Fork of the Sevier River, Teasdale Ranger District, and Cedar Breaks National Monument. In addition to the areas listed above, one population has been recorded on the Manti-LaSal National Forest.

In 1995, a Conservation Assessment, Strategy, and Agreement were signed by state and federal agencies to manage the species under a common agreement (USDA 1995). Since the development of this document, management strategies have been implemented range-wide, which has led to the species not needing federal status.

Recent surveys have indicated that the species has a wider distribution and greater abundance than previously thought. The main threat to this species is the degradation of its habitat by livestock/big game, off-road vehicle use, road and pond construction, and timber harvesting. Weakened plants become more prone to rust infection, with increased risks of mortality from other environmental factors (USFWS 1992).

Beaver Mountain Groundsel (*Senecio castoreus*)

This member of the sunflower family (Asteraceae) is a perennial herb between 7-16 cm tall, erect or ascending. The leaf blades are 1-1.5 cm long and 5-10 mm wide. Herbage is woolly-tomentose; basal leaves are petiolate and are usually the largest in size. The upper leaves are smaller and clasping. The inflorescence is subumbellately corymbose with 1-5 heads and with involucres and bracts. The outer bracts are short and rays are lacking. Fruit is a glabrous achene (Welsh et al. 2003). This species flowers between July and August (Madsen 2002).

Beaver Mountain groundsel is endemic to Piute and Beaver Counties. It is often found on windswept ridges or less commonly downward to the spruce-fir community ranging in elevation from 11,000 to 12,700 feet (Welsh et al. 2003).

This species is known from 7 occurrences, within 9-quarter sections on the Beaver Ranger District of the Fishlake National Forest (Clark 2002, Madsen 2002).

Maguire Campion (*Silene petersonii*)

Maguire campion, a member of the Pink family (Caryophyllaceae), grows from creeping, sub-rhizomatous root branches and tap roots. The stems are 3-5 cm tall, hairy, and more or less glandular. The leaves are mainly along the stem in 2-6 pairs, are 1-5 cm long, and hairy like the stems. The upper petal is bent backwards and the flower is nodding both in bud and when open. Calyx are bell-shaped, 13-19 mm long, 10-veined, and green or purple. Petals are 15-33 mm long and pink to purplish. Maguire campion is a perennial (Welsh et al. 2003) that flowers 5-10 days after snow leaves the site (Spahr et al. 1991). Seeds are brown and 2-2.5 mm wide (Welsh et al. 2003). Small birds, mammals, and wind will disperse the seeds. The creeping rhizomes and perennial taproots persist for several seasons (Spahr et al. 1991).

Maguire campion occurs between 7,000 and 11,300 feet on limestone soils, and preferred sites include ponderosa pine, aspen, and spruce-fir communities (Welsh et al. 2003).

Potential threats to Maguire campion include limestone and mineral exploitation, timber harvest, and off-road vehicle use. Livestock do not use this plant (Spahr et al. 1991).

There are presently no known populations of Maguire campion on the Fishlake National Forest. However, the species does occur in Sevier County on the adjacent Manti-LaSal National Forest (Madsen 2002).

Bicknell Thelesperma (*Thelesperma subnudum var. alpinum*)

Bicknell thelesperma is a perennial herb and member of the Sunflower family (Asteraceae). It grows from a taproot, or less commonly with a caudex and creeping rootstock. Stems are 2-7 cm tall. The leaves occur mainly at the base of the stem and are between 1.5 and 9.0 cm long. Flowering disks are bright yellow (Welsh et al. 2003). Plants flower in late June and into July (Atwood 1996).

A Wayne County endemic, Bicknell thelesperma is restricted to the Navajo and Entrada sandstones and Carmel limestone in pinyon-juniper, mountainbrush, and bristlecone pine communities between 6,900 and 9,000 feet (Welsh et al. 2003).

This plant is not affected by grazing, as it occurs on Navajo sandstone and Carmel limestone on barren slopes where livestock grazing does not occur.

There are presently 13 known locations, within 15-quarter sections on the Loa Ranger District of the Fishlake National Forest (Madsen 2002, Clark 2002).

Sevier Townsendia (*Townsendia jonesii var. lutea*)

A member of the sunflower family (Asteraceae), Sevier Townsendia has stems that are subcaulescent to acaulescent caespitose and rising about 2-4 cm. Leaves are 1-4 cm long and oblanceolate. Flowers are mostly solitary. There are 13-21 yellow ray flowers, and disk flowers are about 3 cm long and yellow. The achene is 3-6 cm long and pubescent (Welsh et al. 2003).

This species prefers habitats in the salt desert shrub and juniper communities from 5,500 to 6,300 feet (Welsh et al. 2003). It occurs in Arapien shale and clays in volcanic rubble, and flowers from May through June (Atwood et al. 1991).

Sevier Townsendia occurs in Juab, Sevier, Sanpete, and Piute Counties. There are presently 2 quarter sections with known occurrences on the Fillmore Ranger District, and 7 quarter sections with known occurrences on the Richfield Ranger District of the Fishlake National Forest (Madsen 2002).